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REMARKS

Claims 31, 38 and 42 are amended. New claims 50-69 are added. Claims 25-69 are pending in the application. Claims 27, 34, 41 and 44 are withdrawn from consideration.

Claims 25-26, 28-33, 35-40, 42-43 and 45-49 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Shindo et al., U.S. Patent No. 5,667,665. The Examiner is reminded by direction to MPEP § 2131 that anticipation requires that each and every element of a claim be disclosed in a single prior art reference. Claims 25-26, 28-33, 35-40, 42-43 and 45-49 are allowable over Shindo for at least the reason that Shindo fails to disclose each and every limitation recited in any of those claims.

With respect to independent claim 25, such recites a high purity cobalt material comprising less than 0.05 ppm Cr. As set forth in the MPEP at § 2131.03, anticipation of a claim requires the reference to disclose the claimed subject matter with "sufficient specificity to constitute anticipation under the statute". This section states that if the reference discloses a broad range and the claims are directed to a narrower range, and there is evidence of unexpected results, "it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute anticipation. Additionally, where no specific examples falling within the claimed range are disclosed in the reference, anticipation must be determined on a case by case basis.

Shindo discloses a cobalt sputtering target and discloses that the target can have a chromium content range of 1 ppm or less (col 4, lns 9-10 and col 7, lns 5-6). The range of chromium content of less than or equal to 1 ppm as disclosed in Shindo is broad relative to the claim 25 recited chromium of less than 0.05 ppm. Shindo fails to disclose any

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examples of cobalt materials having the claim 25 recited chromium content of less than 0.05 ppm and thereby fails to enable such chromium content as required for anticipation.

The claim 25 recited chromium content of less than 0.05 ppm confers improvements relative to the materials of the cited art. As discussed in applicant's disclosure at page 4, lines 1-3, chromium can be undesirable due to its ability to cause problems with connections at semiconductor device interfaces. Shindo fails to provide any specific examples of the claim 25 recites chromium content range, fails to enable such content range, and the recited range confers improvements over the Shindo disclosure. Accordingly, the Shindo disclosure does not anticipate the claim 25 recited cobalt material comprising less than 0.05 ppm Cr, and claim 25 is allowable over this reference.

Dependent claims 26 and 28-30 are allowable over Shindo for at least the reason that they depend from allowable base claim 25.

Independent claim 31, as amended, recites a cobalt material comprising less than 0.12 ppm Mn, and a sum total of Mg, Al, Ti, V, Cr, Mn, Fe, Ni, Cu, Zn, Zr, Nb, Mo, W and Pb of less than 50 ppm. The amendment to independent claim 31 is supported by the specification at, for example, Table 1, Table 2, Table 3 and Table 4. Shindo discloses a cobalt sputtering target that can have an Fe content of 1 ppm or less, a Ni content of 1 ppm or less and a Cr content of 1 ppm or less. Shindo further discloses additional impurities that can include Na, K, U, Th, C and O. Shindo states that the balance comprises cobalt and unavoidable impurities (col 7, Ins 2-10). Shindo does not disclose or suggest the claim 31 recited cobalt material comprising less than 0.12 ppm Mn. Further, Shindo does not disclose a sum total of Mg, Al, Ti, V, Cr, Mn, Fe, Ni, Cu, Zn, Zr, Nb, Mo, W and Pb of less

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than 50 ppm. Accordingly, independent claim 31 is not anticipated by Shindo and is allowable.

Dependent claims 32-33 and 35-37 are allowable over Shindo for at least the reason that they depend from allowable base claim 31.

As amended, independent claim 38 recites a cobalt material comprising greater than 99.9% cobalt, less than 5 ppm Fe, and less than 1 ppm of Ti. The amendment to claim 38 is supported by the specification at, for example, Table 2 and Table 3. Shindo does not disclose the claim 38 recited cobalt material comprising greater than 99.9% cobalt and less than 1 ppm of Ti. Shindo fails to disclose or suggest each and every limitation recited in independent claim 38, and claim 38 is therefore allowable over this reference.

Dependent claims 39-40 are allowable over Shindo for at least the reason that they depend from allowable base claim 38.

As amended, independent claim 42 recites a high purity cobalt material comprising less than 0.12 ppm Mn and less than 3 ppm Ti. Independent claim 42 is allowable for at least reasons similar to those discussed above with respect to independent claims 31 and 38. Dependent claims 43 and 45-49 are allowable for at least the reason that they depend from allowable base claim 42.

New claims 50-69 do not add "new matter" to the application since each is fully supported by the specification as originally filed. Claims 50-54 are supported by the specification at, for example, page 5, lines 19-20; and at Table 1. Claim 55 is supported by the specification at, for example, page 5, lines 15-20. Claims 56-57, 59-60 and 66-69 are supported by the specification at, for example, page 5, lines 3-4. Claims 58 and 61 are supported by the specification at, for example, Table 1; and page 11, lines 12-14. New

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claim 62 is supported by the specification at, for example, page 2, lines 18-25; page 3, line 24 through page 4, line 13; and the claims as originally filed. New claim 65 is supported by the specification at, for example, page 5, lines 4-13.

For the reasons discussed above, claims 25-26, 28-33, 35-40, 42-43 and 45-49 are allowable, and claims 50-69 are believed allowable. Accordingly, applicant respectfully requests formal allowance of claims 25-26, 28-33, 35-40, 42-43 and 45-69 in the Examiner's next action.

Respectfully submitted,

Dated:

July 23, 2002

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JUL 23 2002

GROUP 1700

• Appl. N . 09/608,709

Application Serial No. 09/608,709
Filing Dat Jun 30, 2000
Inventor..... Wang et al.
Assignee..... Honeywell International Inc.
Group Art Unit..... 1741
Examiner Phasge, Arun S.
Attorney's Docket No. 30-5031(4015)
Title: Cobalt-Containing Materials

**VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING
RESPONSE TO MARCH 26, 2002 OFFICE ACTION**

In the Claims

The claims have been amended as follows. Underlines indicate insertions and strikeouts indicate deletions.

31. (Amended) A high-purity cobalt material comprising 99.99% cobalt, less than 0.12 ppm Mn, and a sum total of Mg, Al, Ti, V, Cr, Mn, Fe, Ni, Cu, Zn, Zr, Nb, Mo, W and Pb of less than 50 ppm.

38. (Amended) A cobalt material comprising greater than 99.9% cobalt and less than 0.5 ppm each of Na and K, less than ~~8~~ 5 ppm of Fe, less than 3 ppm of Ni, less than 1 ppm of Cr, less than 1 ppm of Ti and less than 450 ppm of O.

42. (Amended) A high-purity cobalt material comprising less than 50 ppm total metallic impurities, less than 0.12 ppm Mn and less than 3 ppm Ti.

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